



Study solutions for reliable, efficient and safe power systems

A properly designed and operated power system can save you money and increase productivity while meeting the growing and changing demands of your business. Eaton offers a wide range of options, including short circuit, coordination and arc flash studies, mitigation techniques, OSHA required electrical safety training, failure analysis and on-site investigations.

Eaton's approach goes beyond identifying the problem or cause of equipment failure, and instead aims to recommend an equipment solution. Our engineers will be there every step of the way—from determining the cause of the problem to ensuring the equipment solution recommended is installed and operating correctly.



Studies provide data with recommendations

A study ensures you understand the current state of your system while providing recommendations to optimize equipment, enhance safety and improve reliability.



Safety first

A study ensures your employees and customers are safe during fault conditions and you are meeting the latest industry standards and requirements.



Solutions to fit your needs

From a traditional power systems study to advanced analysis to troubleshoot specific concerns, the scope of a study will be custom designed to meet your needs and help you manage your power system as a strategy resource to give you a competitive advantage.

EATON

Powering Business Worldwide





Arc flash analysis

Calculates arc flash hazards associated with energized work at locations throughout the power system in accordance with NFPA® 70E, IEEE Std. 1584, National Electrical Safety Code® and CSA® Z462 requirements. Calculations include arc flash boundary and incident energy, with the resulting information being provided on arc flash warning labels to be installed on the distribution system electrical equipment.



Harmonic analysis study

Calculates system harmonic voltages and currents throughout the electrical distribution system. This determines the effect of adding harmonic-producing loads into a system. If the calculated magnitudes of harmonic voltages and/or currents are excessive, engineers will determine the optimal corrective solution to reduce the harmonic quantities to within acceptable limits. When a harmonic filter is recommended, a complete equipment specification will be developed. A study case will be conducted to verify that the harmonic filtering equipment will reduce harmonic levels to within acceptable standards.



Field harmonic measurements

Determines the sources and magnitudes of harmonic current and voltages that are present in the electrical power system. Measurements are used to verify harmonic generation from all significant harmonic sources and demonstrate the effect of system resonance caused by power factor capacitors. Measurements are also used to identify any system problems and recommend equipment solutions to eliminate these problems. Finally, they may also be used to ensure compliance with IEEE Std 519 after new variable frequency drives are added to the system.



NERC compliance

The goal of North American Electric Reliability Corporation (NERC) is to ensure the effective and efficient reduction of risks to the reliability and security of the grid. NERC develops and enforces a series of standards, including Protection and Control (PRC) Standards, Verification of Models and Data (MOD) for Generator, Exciter, Governor Standards and Cyber Security (CIP) Standards. Eaton is experienced to provide NERC compliance studies to support utility customers to comply with the requirements.

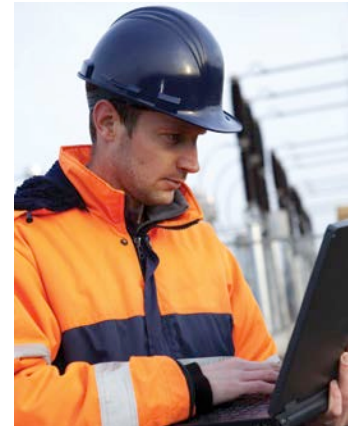


Power factor correction study

Analyzes the system capability to supply the connected load under steady-state conditions, determination of appropriate continuous ratings for electrical equipment, and optimal placement and characteristics of reactive power compensation equipment. If the study results indicate that power factor correction equipment is necessary, the appropriate hardware will be properly specified and located to maintain desired power factor at the metering point.

Complete arc flash hazard analysis and mitigation solutions

- Arc flash studies including IEEE® 1584—2018 changes, on-site data collection, labeling and arc flash mitigation
- Arc flash and electrical safety training
- Construction studies bundle (short-circuit and device evaluation studies, protective device coordination study and arc flash hazard analysis)
- Selective coordination for applicable emergency systems (NEC® 700, NEC 701, NEC 708)



Eaton's experience

We offer a wide range of power system engineering services combining utility experience with state-of-the-art technologies to assist you in addressing new and emerging system problems. Our services include power system studies for industrial, commercial and utility power systems.

Eaton's power system engineers are heavily involved in industry activities by conducting seminars and workshops for utilities and industrial groups worldwide. They participate in technical societies such as IEEE and international standards committees by presenting technical papers and taking part in working groups and task forces. This global involvement in the electrical industry is an important component of Eaton's complete solution as it allows us to stay up to date with the most relevant challenges and the means to handle them to provide the best asset management.

Advanced power system studies offer a focused and systematic approach to solve complex problems that can occur in a power system

- Switching transient analysis
- Bus bracing studies
- DER interconnection studies
- Grounding studies
- Harmonic analysis
- Power quality site surveys and disturbance monitoring
- Load flow studies
- Microgrid feasibility studies
- Motor starting studies
- NERC compliance
- Power factor correction studies
- Resiliency studies

For more information, visit
Eaton.com/pse

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

© 2023 Eaton
All Rights Reserved
Printed in USA
Publication No. SA027026EN / Z25664
February 2023

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.

